

THANKS FOR CHOOSING ONE OF OUR KITS!

This manual has been written taking into account the common issues that we often find people experience in our workshops. The order in which the components are placed on the board is meant to make assembly as easy as possible.

Some steps are not obvious, so even if you're an experienced DIYer please read the steps thoroughly before starting.

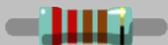
If this is your first project, please read this article before you start assembling the kit:

www.befaco.org/howto/

GOOD LUCK!

MAIN PCB (THE SQUARE ONE)

OPEN MAIN BOARD BAG A

			
RESISTORS			
Qty	Value	Code	Name on PCB
MAIN PCB (The square one)			
4	47k	Yellow, violet, black, red, brown	R111, R112, R114, R117
2	120 OHM	Brown, red, black, black, brown	R105, R106
2	68 OHM	Blue, gray, black, gold, brown	R104, R107
2	10k	Brown, black, black, red, brown	R108, R109
2	39k	Orange, white, black, red, brown	R115, R116
2	100k	Brown, black, black, orange, brown	R110, R113
CONTROL PCB (The "L" shaped one)			
2	1k	Brown, black, black, brown, brown	R100, R101
2	2k2	Red, red, black, brown, brown	R102, R103

	
FERRITE	
Solder the two ferrite beads by using a recycled resistor leg passed through each ferrite and proceed as if it were a resistor. Ferrite beads don't have polarity.	
The space for the ferrites is a bit tight. You can either leave some slack in the leads or leave them till after you have fitted the power connector and diode.	
Qty	Name on PCB
2	FERRITE+, FERRITE-

DIODES 

Solder the diodes **observing their polarity**. The black or white line on the diode must match with the white line on the diode symbol on the PCB silkscreen.

Qty	Value	Name on PCB
2	1N5817	D1,D2

ICs 

First **place the sockets** (taking care to orientate them properly - the notch or dot on one end of the IC should match the image on the silkscreen) and solder them into their correct positions.

Next place the ICs in their respective sockets (again taking note of their orientation - the notch or dot on the top of the IC must match that of the socket and silkscreen).

Qty	Value	Name on PCB
1	2073D	IC100
1	TL074	IC101

CAPACITORS 

Identifying capacitors can be quite tricky. Codes stated are indicative, please take a look at this guide for help identifying capacitors: <http://www.wikihow.com/Read-a-Capacitor>

Qty	Value	Code	Name on PCB
MAIN PCB			
2	56p	560	C112, C113
3	100n	104	C103, C104, C109
CONTROL PCB			
2	47n	47n (Polyester)	C100, C101

ELECTROLYTIC CAPACITORS 

Values are written on the side of the capacitor. Mind their polarity (The long leg of the capacitor is the positive (+)).

Qty	Value	Code	Name on PCB
2	10uF	10uF	C102, C105
2	100uF	100uf	C108, C111
1	220uF	220uF	C110
2	470uF	470uF	C106, C107



TRANSISTORS

These are to be placed on the **CONTROL PCB**. Be sure they are orientated correctly. The curved and flat sides of the silkscreen outline of the transistor on the PCB must match that of the transistor's body.

Qty	Value	Name on PCB
2	2N3904	T100, T101

OPEN MAIN BOARD BAG B



MALE PIN HEADERS

Place and solder the Male Pin Header on the silkscreen side AT "SV2" & "CON_2". It is the shorter pins that you are soldering. Keep in mind these are to be placed on the **opposite side of the PCB** from the other components.



POWER CONNECTOR

Solder the power connector at "POWER", over the silkscreen marking. The small arrow on the connectors must be on the side with the thick white line.



FEMALE PIN HEADERS

Place the female pin headers over the silkscreen markings at positions "CONN_TO_100" & "SV1" and solder.

OPEN REMAINING BAG

FRONT PANEL COMPONENTS MOUNTING TIPS:

Now we will proceed to mount the jacks, potentiometer, switches and LEDs. This part of the assembly is **CRITICAL**. Please take your time and read the following instructions carefully.

These components must **NOT** be soldered until they are placed on the PCB and fully attached to the front panel.

There are two reasons for this:

- The height of the panel components are not all the same. Because of this, if not attached properly before soldering, they will not stay properly seated against the panel. This might cause mechanical stress reducing their life expectancy and in the worst case cause them to break.
- The second reason is that it is very difficult to align the components to the holes if the panel is not positioned prior to soldering. In the case of the LEDs, they are almost impossible to set to the correct height without reference to the front panel.

ON THE CONTROL BOARD:

SWITCHES		
Remove the two nuts and the tabbed washer from the toggle switches (if they are still present). Discard one nut and the tabbed washer, but keep one nut for securing to the front panel later. Place the toggle switches on the PCB but don't solder them yet.		
Qty	Type	Name on PCB
1	Single two position	MONO
1	Dual two position	HPF

MINI-JACKS
Place all the mini-jacks onto the PCB ensuring they are on the silkscreen side, but don't solder yet .
Caution: the switch nut and the jack nuts look the same, but they are not equally sized and will not fit in each others' thread, so make sure to keep them separate!

LEDs	
Place the LEDs onto the PCB minding, their polarity, but don't solder them until the front panel is in place. This is the only way to solder them in the right position.	
The long leg is the positive and the short the negative. On the PCB the square pad indicates the negative side and there is a + symbol to indicate the positive.	
Qty	Name on PCB
2	LED1, LED2



POTENTIOMETER		
Cut the locating lug on the pot with snips as pictured. Now place the potentiometer on the PCB but... don't solder it yet!		
Qty	Type	Name on PCB
1	Dual 10k	VOL

FRONT PANEL

Attach the **front panel** to the CONTROL PCB adjusting the parts one by one if necessary until they fit. At this point a pair of fine tweezers can be helpful.

- If they are all secure you can now (finally) **solder** them to the PCB.
- Next, adjust the **LEDs** so that they are flush with the panel and solder them.

ON THE MAIN BOARD:

1/4" JACKS AND PCBS ASSEMBLY

- Place the 1/4" jacks over the silkscreen markings but **don't solder them yet.**
- Connect the **MAIN PCB** to the **CONTROL PCB** using the pin headers and screw the jacks to the panel.
- Secure the parts to the panel and then **solder** them to the PCB.

FINISHING

- Put the **knob** on the potentiometer and the **caps** on the switches.
- Connect the **power ribbon cable**: The red wire (-12V) on the power ribbon cable corresponds to pin number one on the male power connector. The number one pin is indicated with a small triangle on the male power connector and a white line on the main PCB. A white or black line (or "-12v") marked on your power bus normally indicates the corresponding pin.

ENJOY YOUR NEW BEFACO MODULE!